Frequency Mixer RMS-5+

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		+4	+7	+10
5.0	35.0	6.56	6.17	5.95
10.0	40.0	6.45	6.03	5.79
69.6	99.6	6.38	5.96	5.76
129.0	159.0	6.21	5.82	5.65
188.5	218.5	6.14	5.79	5.61
248.0	278.0	6.12	5.79	5.61
307.4	337.4	6.16	5.83	5.65
366.9	396.9	6.25	5.88	5.68
426.4	456.4	6.25	5.89	5.69
485.9	515.9	6.33	5.96	5.75
545.3	575.3	6.43	6.03	5.80
604.8	634.8	6.53	6.07	5.79
664.3	694.3	6.64	6.17	5.87
723.7	753.7	6.75	6.26	5.96
783.2	813.2	6.89	6.31	5.99
842.7	872.7	6.97	6.30	5.97
902.1	932.1	7.15	6.41	6.03
961.6	991.6	7.46	6.71	6.24
1021.1	1051.1	7.65	6.97	6.50
1080.5	1110.5	7.85	7.27	6.83
1140.0	1170.0	7.99	7.59	7.24
1199.5	1229.5	8.02	7.71	7.45
1258.9	1288.9	7.97	7.72	7.59
1318.4	1348.4	8.00	7.78	7.71
1377.9	1407.9	8.08	7.85	7.78
1437.4	1467.4	8.12	7.84	7.75
1496.8	1526.8	8.12	7.79	7.68
1556.3	1586.3	8.19	7.80	7.67
1615.8	1645.8	8.28	7.85	7.71
1675.2	1705.2	8.40	7.90	7.74
1734.7	1764.7	8.58	7.97	7.79
1794.2	1824.2	8.86	8.07	7.83
1893.3	1923.3	9.30	8.17	7.84
1952.8	1982.8	9.69	8.34	7.90
1992.4	2022.4	10.01	8.51	7.99
2051.9	2081.9	10.69	8.89	8.23
2091.5	2121.5	11.16	9.16	8.41
2151.0	2181.0	12.06	9.60	8.67
2190.6	2220.6	12.43	9.81	8.80
2250.1	2280.1	13.10	10.11	8.93

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+4	+7	+10
10.1	40.1	15.78	17.28	16.97
69.6	99.6	19.05	17.08	16.26
129.0	159.0	16.58	15.18	19.12
188.5	218.5	13.70	14.50	21.04
248.0	278.0	13.27	17.48	21.90
307.4	337.4	12.91	21.84	20.29
366.9	396.9	14.69	22.14	22.59
426.4	456.4	15.11	20.75	18.32
485.9	515.9	16.77	25.35	18.04
545.3	575.3	17.83	20.52	16.59
604.8	634.8	17.14	18.51	19.67
664.3	694.3	17.06	18.88	14.74
723.7	753.7	16.25	12.47	10.93
783.2	813.2	13.45	11.53	9.69
842.7	872.7	13.11	12.85	11.13
902.1	932.1	13.08	13.78	12.91
961.6	991.6	10.58	13.79	14.05
1021.1	1051.1	8.68	11.35	13.03
1080.5	1110.5	7.50	10.12	12.27
1140.0	1170.0	6.77	8.05	9.58
1199.5	1229.5	6.93	7.54	8.19
1258.9	1288.9	7.40	7.14	8.11
1318.4	1348.4	8.26	8.04	8.67
1377.9	1407.9	8.96	9.15	9.48
1437.4	1467.4	9.71	10.67	10.60
1496.8	1526.8	10.40	12.00	12.23
1556.3	1586.3	9.97	12.19	13.07
1615.8	1645.8	10.00	12.57	15.22
1675.2	1705.2	10.55	12.99	14.27
1734.7	1764.7	10.20	13.86	15.72
1794.2	1824.2	9.77	12.03	14.87
1853.6	1883.6	10.42	12.68	15.05
1893.3	1923.3	9.95	12.99	14.79
1952.8	1982.8	11.51	11.65	16.10
1992.4	2022.4	13.21	11.43	13.97
2051.9	2081.9	16.54	13.05	12.94
2091.5	2121.5	13.76	17.33	15.93
2151.0	2181.0	8.25	17.02	17.02
2190.6	2220.6	7.00	16.33	15.90
2250.1	2280.1	5.54	12.34	14.38

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+1dBm (dB) @LO (dBm)		
		+4	+7	+10
10.1	40.1	0.50	0.35	0.24
69.6	99.6	0.87	0.66	0.46
129.0	159.0	1.06	0.84	0.62
188.5	218.5	1.12	0.81	0.62
248.0	278.0	1.13	0.80	0.63
307.4	337.4	1.04	0.80	0.64
366.9	396.9	1.13	0.87	0.71
426.4	456.4	1.24	0.97	0.80
485.9	515.9	1.28	1.02	0.86
545.3	575.3	1.48	1.22	1.04
604.8	634.8	1.66	1.38	1.21
664.3	694.3	1.68	1.46	1.27
723.7	753.7	1.84	1.56	1.38
783.2	813.2	1.89	1.63	1.45
842.7	872.7	1.86	1.66	1.45
902.1	932.1	1.79	1.64	1.43
961.6	991.6	1.56	1.54	1.37
1021.1	1051.1	1.46	1.38	1.30
1080.5	1110.5	1.25	1.15	1.11
1140.0	1170.0	1.07	0.93	0.90
1199.5	1229.5	1.05	0.83	0.77
1258.9	1288.9	1.06	0.78	0.67
1318.4	1348.4	1.03	0.74	0.58
1377.9	1407.9	1.04	0.71	0.53
1437.4	1467.4	1.03	0.70	0.53
1496.8	1526.8	1.06	0.68	0.50
1556.3	1586.3	1.07	0.63	0.48
1615.8	1645.8	1.02	0.60	0.44
1675.2	1705.2	1.00	0.58	0.42
1734.7	1764.7	1.03	0.58	0.46
1794.2	1824.2	1.02	0.61	0.44
1853.6	1883.6	0.95	0.62	0.42
1893.3	1923.3	0.89	0.63	0.43
1952.8	1982.8	0.74	0.64	0.42
1992.4	2022.4	0.67	0.62	0.40
2051.9	2081.9	0.39	0.50	0.36
2091.5	2121.5	0.24	0.49	0.36
2151.0	2181.0	-0.04	0.40	0.29
2190.6	2220.6	-0.25	0.38	0.29
2250.1	2280.1	-0.61	0.31	0.28

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=750.1MHz (dB) @LO (dBm) +7
740.0	10.1	6.33
721.3	28.8	6.34
702.6	47.5	6.31
683.8	66.3	6.30
665.1	85.0	6.27
646.4	103.7	6.28
627.7	122.4	6.26
609.0	141.1	6.25
590.3	159.8	6.24
571.5	178.6	6.24
552.8	197.3	6.24
534.1	216.0	6.23
515.4	234.7	6.21
496.7	253.4	6.21
477.9	272.2	6.19
459.2	290.9	6.18
440.5	309.6	6.22
421.8	328.3	6.13
403.1	347.0	6.10
384.4	365.7	6.05
365.6	384.5	6.01
346.9	403.2	6.06
328.2	421.9	6.08
309.5	440.6	6.09
290.8	459.3	6.09
272.1	478.0	6.11
253.3	496.8	6.12
234.6	515.5	6.03
215.9	534.2	6.10
197.2	552.9	6.09
178.5	571.6	6.06
159.7	590.4	6.09
141.0	609.1	6.09
122.3	627.8	6.07
103.6	646.5	6.09
84.9	665.2	6.14
66.2	683.9	6.15
47.4	702.7	6.14
28.7	721.4	6.15
10.0	740.1	6.38

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10.1MHz (dB) @LO (dBm) +7
10.0	20.1	6.55
30.2	40.3	6.54
50.4	60.5	6.55
70.6	80.7	6.50
90.8	100.9	6.55
111.0	121.1	6.58
131.2	141.3	6.59
151.4	161.5	6.58
171.6	181.7	6.60
191.8	201.9	6.60
212.0	222.1	6.56
232.2	242.3	6.54
252.4	262.5	6.64
272.7	282.8	6.70
292.9	303.0	6.68
313.1	323.2	6.68
333.3	343.4	6.69
353.5	363.6	6.72
373.7	383.8	6.74
393.9	404.0	6.71
434.3	444.4	6.84
454.5	464.6	6.85
494.9	505.0	6.87
515.1	525.2	6.89
555.5	565.6	6.92
575.7	585.8	6.94
616.1	626.2	6.95
636.3	646.4	6.99
676.7	686.8	7.04
696.9	707.0	7.05
737.3	747.4	7.21
757.6	767.7	7.20
798.0	808.1	7.27
818.2	828.3	7.30
858.6	868.7	7.38
878.8	888.9	7.44
919.2	929.3	7.62
939.4	949.5	7.68
979.8	989.9	7.87
1000.0	1010.1	7.99

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1500.1MHz (dB) @LO (dBm) +7
1000.0	500.1	8.75
979.8	520.3	8.68
959.6	540.5	8.65
939.4	560.7	8.61
919.2	580.9	8.58
899.0	601.1	8.53
878.8	621.3	8.49
858.6	641.5	8.46
838.4	661.7	8.43
818.2	681.9	8.40
798.0	702.1	8.37
777.8	722.3	8.33
757.6	742.5	8.27
737.3	762.8	8.10
717.1	783.0	8.13
696.9	803.2	8.10
676.7	823.4	8.07
656.5	843.6	8.06
636.3	863.8	8.07
616.1	884.0	8.07
575.7	924.4	8.07
555.5	944.6	8.10
515.1	985.0	8.10
494.9	1005.2	8.08
454.5	1045.6	8.09
434.3	1065.8	8.08
393.9	1106.2	7.99
373.7	1126.4	7.96
333.3	1166.8	7.87
313.1	1187.0	7.85
272.7	1227.4	7.82
252.4	1247.7	7.84
212.0	1288.1	7.86
191.8	1308.3	7.86
151.4	1348.7	7.86
131.2	1368.9	7.87
90.8	1409.3	7.84
70.6	1429.5	7.81
30.2	1469.9	7.76
10.0	1490.1	7.94

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+4	+7	+10	+4	+7	+10
5.0	77.61	78.28	78.52	69.01	82.08	77.02
10.0	71.70	73.09	73.85	63.30	75.39	72.75
69.6	70.11	67.48	64.59	52.04	59.19	49.56
129.0	64.54	65.46	60.68	46.87	52.46	43.80
188.5	60.53	64.14	59.25	43.27	49.43	41.27
248.0	59.16	63.14	57.20	41.52	46.62	38.37
307.4	57.95	63.12	55.16	39.89	44.72	36.49
366.9	57.48	63.39	53.76	39.94	42.88	34.48
426.4	58.51	60.48	52.11	40.58	39.55	32.34
485.9	60.52	55.89	49.50	41.45	37.39	30.72
545.3	61.55	53.43	47.41	45.81	34.55	28.83
604.8	60.24	51.58	46.13	49.62	31.94	26.89
664.3	55.87	48.54	44.16	44.69	29.67	25.19
723.7	51.96	45.51	41.71	37.54	27.58	23.59
783.2	50.21	44.53	40.80	33.82	25.99	22.46
842.7	48.01	43.12	39.70	29.87	24.09	20.94
902.1	46.57	42.15	38.96	26.63	21.88	19.22
961.6	45.75	42.56	39.43	24.42	20.38	18.06
1021.1	43.88	42.23	39.63	22.78	19.13	17.02
1080.5	42.51	41.94	39.79	21.29	18.05	16.03
1140.0	41.32	41.74	40.20	19.86	17.13	15.25
1199.5	39.94	40.67	39.90	18.72	16.22	14.52
1258.9	39.31	40.14	39.75	17.76	15.44	13.84
1318.4	38.69	39.85	39.69	16.84	14.75	13.27
1377.9	37.85	39.31	39.51	15.97	14.04	12.70
1437.4	37.08	39.02	39.53	15.23	13.50	12.11
1496.8	36.53	38.68	39.46	14.42	12.87	11.66
1556.3	36.30	38.41	39.00	13.64	12.31	11.23
1615.8	36.07	38.14	38.64	12.97	11.84	10.98
1675.2	35.92	37.85	37.93	12.44	11.50	10.62
1734.7	35.51	37.46	37.66	12.05	11.28	10.46
1794.2	35.29	37.25	37.58	11.56	11.07	10.39
1893.3	35.01	37.36	38.38	11.04	10.73	10.22
1952.8	34.87	37.30	38.65	10.72	10.51	10.00
1992.4	34.47	37.00	38.95	10.56	10.36	10.01
2051.9	34.14	36.66	39.01	10.36	10.20	9.83
2091.5	33.51	35.90	38.12	10.21	10.19	9.84
2151.0	32.97	35.40	37.41	10.16	10.12	9.91
2190.6	32.30	34.80	36.97	10.12	10.13	9.85
2250.1	31.85	34.45	36.80	10.08	10.16	9.95

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+4	+7	+10
10.1	40.1	50.32	56.78	53.39
69.6	99.6	40.41	39.52	39.41
129.0	159.0	35.90	35.44	35.11
188.5	218.5	33.53	32.83	32.56
248.0	278.0	31.90	31.23	30.85
307.4	337.4	30.61	29.94	29.53
366.9	396.9	29.48	28.86	28.43
426.4	456.4	28.36	27.82	27.49
485.9	515.9	26.95	26.50	26.17
545.3	575.3	25.71	25.26	24.88
604.8	634.8	24.47	24.09	23.81
664.3	694.3	23.27	23.01	22.85
723.7	753.7	22.28	22.04	21.89
783.2	813.2	21.50	21.20	21.07
842.7	872.7	21.05	20.77	20.66
902.1	932.1	20.86	20.74	20.66
961.6	991.6	20.71	20.83	20.82
1021.1	1051.1	20.36	20.76	20.92
1080.5	1110.5	20.19	20.68	21.06
1140.0	1170.0	19.86	20.46	20.95
1199.5	1229.5	19.58	20.18	20.74
1258.9	1288.9	19.56	20.12	20.67
1318.4	1348.4	19.67	20.27	20.85
1377.9	1407.9	19.81	20.45	21.15
1437.4	1467.4	20.14	20.86	21.47
1496.8	1526.8	20.55	21.29	22.01
1556.3	1586.3	21.05	21.78	22.50
1615.8	1645.8	21.81	22.54	23.21
1675.2	1705.2	22.50	23.29	23.98
1734.7	1764.7	23.37	24.24	25.00
1794.2	1824.2	24.08	25.22	26.03
1853.6	1883.6	24.54	25.99	27.02
1893.3	1923.3	24.68	26.19	27.46
1952.8	1982.8	24.57	26.02	27.37
1992.4	2022.4	24.49	25.77	26.91
2051.9	2081.9	24.21	25.31	26.20
2091.5	2121.5	24.21	25.19	26.00
2151.0	2181.0	24.28	25.10	25.70
2190.6	2220.6	24.33	25.04	25.51
2250.1	2280.1	24.63	25.26	25.55

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+4	+7	+10
5.0	35.0	2.73	2.64	2.55
10.0	40.0	1.68	1.62	1.58
69.6	99.6	1.18	1.17	1.19
129.0	159.0	1.11	1.07	1.10
188.5	218.5	1.09	1.01	1.06
248.0	278.0	1.09	1.03	1.06
307.4	337.4	1.11	1.06	1.07
366.9	396.9	1.15	1.10	1.09
426.4	456.4	1.18	1.14	1.13
485.9	515.9	1.22	1.18	1.16
545.3	575.3	1.28	1.23	1.21
604.8	634.8	1.38	1.32	1.28
664.3	694.3	1.51	1.43	1.38
723.7	753.7	1.65	1.57	1.52
783.2	813.2	1.82	1.73	1.66
842.7	872.7	2.02	1.90	1.82
902.1	932.1	2.24	2.10	2.01
961.6	991.6	2.46	2.31	2.19
1021.1	1051.1	2.62	2.49	2.37
1080.5	1110.5	2.72	2.62	2.52
1140.0	1170.0	2.76	2.71	2.64
1199.5	1229.5	2.78	2.77	2.73
1258.9	1288.9	2.80	2.80	2.79
1318.4	1348.4	2.81	2.81	2.81
1377.9	1407.9	2.82	2.81	2.81
1437.4	1467.4	2.79	2.77	2.77
1496.8	1526.8	2.77	2.74	2.73
1556.3	1586.3	2.77	2.73	2.72
1615.8	1645.8	2.78	2.73	2.71
1675.2	1705.2	2.81	2.73	2.71
1734.7	1764.7	2.82	2.71	2.68
1794.2	1824.2	2.85	2.69	2.65
1853.6	1883.6	2.90	2.69	2.61
1893.3	1923.3	2.95	2.70	2.60
1952.8	1982.8	3.07	2.77	2.63
1992.4	2022.4	3.15	2.82	2.67
2051.9	2081.9	3.30	2.93	2.75
2091.5	2121.5	3.39	3.00	2.78
2151.0	2181.0	3.52	3.08	2.85
2190.6	2220.6	3.60	3.14	2.89
2250.1	2280.1	3.68	3.19	2.94

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+4	+7	+10
5.0	1.68	2.43	3.47
10.0	1.67	2.43	3.47
69.6	1.89	2.67	3.70
129.0	1.88	2.67	3.69
188.5	1.83	2.57	3.52
248.0	1.88	2.64	3.60
307.4	1.88	2.62	3.54
366.9	1.92	2.65	3.54
426.4	1.97	2.69	3.56
485.9	2.01	2.70	3.52
545.3	2.07	2.74	3.54
604.8	2.12	2.77	3.52
664.3	2.17	2.79	3.50
723.7	2.23	2.83	3.52
783.2	2.27	2.84	3.48
842.7	2.35	2.87	3.48
902.1	2.41	2.91	3.47
961.6	2.48	2.96	3.49
1021.1	2.55	3.01	3.52
1080.5	2.58	3.02	3.49
1140.0	2.64	3.05	3.52
1199.5	2.66	3.03	3.45
1258.9	2.72	3.05	3.45
1318.4	2.73	3.02	3.38
1377.9	2.78	3.03	3.35
1437.4	2.83	3.03	3.33
1496.8	2.87	3.02	3.27
1556.3	2.97	3.06	3.30
1615.8	3.04	3.09	3.29
1675.2	3.17	3.16	3.33
1734.7	3.33	3.26	3.38
1794.2	3.47	3.35	3.38
1853.6	3.67	3.46	3.48
1893.3	3.78	3.52	3.52
1952.8	3.97	3.67	3.62
1992.4	4.05	3.72	3.59
2051.9	4.26	3.86	3.72
2091.5	4.31	3.89	3.70
2151.0	4.50	4.03	3.78
2190.6	4.54	4.05	3.78
2250.1	4.67	4.16	3.90

IF (OUT) (MHz)	IF VSWR @LO=1500.1MHz (:1) @LO (dBm)		
	+4	+7	+10
5.0	1.51	1.21	1.03
10.0	1.52	1.22	1.03
49.6	1.22	1.02	1.15
89.0	1.23	1.06	1.13
128.5	1.23	1.05	1.13
168.0	1.22	1.06	1.16
207.4	1.24	1.07	1.15
246.9	1.23	1.08	1.17
286.4	1.25	1.09	1.16
325.8	1.23	1.08	1.16
365.3	1.24	1.11	1.19
404.8	1.28	1.12	1.15
444.2	1.26	1.09	1.14
483.7	1.27	1.11	1.15
523.2	1.29	1.13	1.14
562.6	1.28	1.12	1.14
602.1	1.29	1.12	1.14
641.6	1.30	1.11	1.12
681.0	1.28	1.09	1.11
720.5	1.29	1.08	1.10
760.0	1.28	1.07	1.09
799.4	1.28	1.07	1.10
838.9	1.28	1.08	1.12
878.4	1.27	1.10	1.15
917.8	1.26	1.11	1.18
957.3	1.28	1.16	1.22
996.8	1.28	1.22	1.31
1036.2	1.26	1.23	1.33
1075.7	1.33	1.31	1.41
1115.2	1.35	1.38	1.50
1154.6	1.38	1.42	1.54
1194.1	1.46	1.53	1.66
1233.6	1.47	1.57	1.70
1273.0	1.57	1.67	1.80
1312.5	1.67	1.80	1.95
1352.0	1.73	1.87	2.02
1371.7	1.79	1.93	2.09
1411.2	1.92	2.09	2.26
1430.9	1.95	2.11	2.27
1470.4	2.10	2.27	2.43
1490.1	2.20	2.37	2.56

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	+1	18	11	21	9	48	39	44	43	43
1	-	16	+0	38	18	41	35	47	38	56	42	60
2	>100	54	35	54	34	64	49	56	45	59	60	62
3	>100	72	62	65	65	66	66	73	68	70	65	75
4	>100	>80	>80	>80	>80	77	>80	>80	>80	>80	>80	>80
5	>100	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
6	>100	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
7	>100	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
8	>100	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
9	>100	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
10	>100	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:
RF IN: 750.1 MHz; -14.00 dBm.
LO IN: 780.01 MHz; +7.00 dBm
IF OUT: 29.91 MHz; -20.17 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	6	28	21	35	21	61	53	59	45	61
1	-	16	+0	37	19	44	41	51	49	61	50	67
2	89	45	25	48	26	57	45	61	40	64	75	64
3	>100	47	44	47	40	54	46	63	58	68	57	83
4	>100	64	66	54	56	53	43	68	58	60	60	66
5	>100	71	67	65	54	59	58	62	59	76	62	69
6	>100	>90	73	73	85	>90	54	64	60	72	70	70
7	>100	>90	75	>90	78	81	72	75	64	68	71	77
8	>100	>90	>90	>90	80	85	88	78	72	81	69	84
9	>100	>90	>90	>90	86	>90	86	>90	83	81	71	81
10	>100	>90	>90	>90	>90	>90	88	>90	>90	85	82	85
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions:
RF IN: 750.1 MHz; -4.00 dBm.
LO IN: 780.01 MHz; +7.00 dBm
IF OUT: 29.91 MHz; -10.31 dBm

Notes: 1. All Harmonics are in (dBc) relative to IF OUTPUT.
2. + entry denotes harmonics are in (dBc) above IF OUTPUT.
3. RF Cal represent the Harmonics level of the RF input signal to the mixer.